

Endodermis and prothallium of *Equisetum*.—KASHYAP³⁴ has investigated the endodermis and prothallium of *Equisetum debile*. He finds that the endodermis is very unstable. At the nodes of the subterranean and aerial sterile shoots, and in the fertile region, the endodermis invests each vascular bundle, while in the internodes of the subterranean and aerial sterile shoots it surrounds the ring of bundles in two layers. These two rings of endodermis occasionally fuse, leaving islands of parenchymatous tissue. In the case of the prothallium, he discovered that if the spores are sown thickly, the prothallia remain small, develop only one growing point, and usually bear only one kind of sex organ. If the spores germinate at a distance from each other, the prothallia become very large and develop a meristem around the margin. It is somewhat remarkable that in this latter case the prothallia produce archegonia first and antheridia later.—J. M. C.

Variation in *Picea excelsa*.—A delayed volume of *Acta Horti Bergiana* contains a remarkable series of illustrations of variations in seedlings, leaves, and especially in the ovulate cones of *Picea excelsa*.³⁵ Most of the plates are double and many of them are beautifully colored, and the number of separate figures averages between 30 and 40 to a plate. The immense amount of variation shown in these figures doubtless would have induced many writers to multiply species. The present account consists of the figures and a good description of plates. There is scarcely a page of text. Even as it is, the illustrations are valuable as a record, and WITTROCK may give a full account later.—CHARLES J. CHAMBERLAIN.

Vegetation of Ohio.—Miss BRAUN³⁶ has studied the vegetation of Ohio as seen in the Cincinnati region, classifying the plant associations according to the physiography into the upland, slope, valley, and floodplain series. All the successions progress toward the mesophytic forest, the climax being either a forest of *Fagus* on the pre-erosion topography, or a mixed mesophytic forest upon the floodplains and in the ravines. She is of the opinion that this erosion climax, which resembles the forest of the southern Appalachians, is the more permanent and will eventually displace the pre-erosion climax beech forest. The report is well illustrated with photographs, maps, and diagrams.—GEO. D. FULLER.

Addisonia.—The fourth number of the second volume of this journal, with its "colored illustrations and popular descriptions of plants," includes the

³⁴ KASHYAP, S. R., Notes on *Equisetum debile* Roxb. Ann. Botany 31:439-445. figs. 3. 1917.

³⁵ WITTROCK, V. B., De *Picea excelsis* (Lam.) Lk., praesertim de formis suecicis hujus arboris. Pars I. Meddelanden om granen. Acti Horti Bergiani 5:1-91. pls. 1-23. 1914.

³⁶ BRAUN, E. LUCY, The physiographic ecology of the Cincinnati region. Ohio Biol. Surv. 2:(Bull. 7) 116-211. figs. 58. 1916.